

Pronominal and reflexive resolution in noncomplementary environments

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Complementary distribution between pronouns and reflexives

(1) Gladys said that Ethel praised **herself**.

→ herself = Ethel ✓

→ herself = Gladys ✗

(“principle A”)

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→ her = Ethel ✗
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Complementarity: the available antecedents for pronouns vs. reflexives are in complementary structural positions (Chomsky, 1981; Reinhart, 1983).

Complementarity does not always hold! (Cantrall, 1974; Chomsky, 1986; Zribi-Hertz, 1989; Kuno, 1987; Pollard and Sag, 1992; Reinhart and Reuland, 1993)

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(3) Gladys said that Ethel saw a picture of **herself/her**.

→ her = Gladys ✓

→ herself = Gladys ✓

→ her = Ethel ✓

→ herself = Ethel ✓

...both ok?

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(3) Gladys said that Ethel saw a picture of **herself/her**.

→ her = Gladys ✓

→ herself = Gladys ✓

→ her = Ethel ✓

→ herself = Ethel ✓

...both ok?

(4) Gladys said that Ethel saw a snake near **herself/her**.

→ her = Gladys ✓

→ herself = Gladys ✓

→ her = Ethel ✓

→ herself = Ethel ✓

...both ok?

Complementarity does not always hold! (Cantrall, 1974; Chomsky, 1986; Zribi-Hertz, 1989; Kuno, 1987; Pollard and Sag, 1992; Reinhart and Reuland, 1993)

(5) Gladys said that Ethel praised both Astrid and **herself/her**.

→ her = Gladys ✓

→ herself = Gladys ✓

→ her = Ethel ✗

→ herself = Ethel ✓

...A exempt, B still applies?

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(5) Gladys said that Ethel praised both Astrid and **herself/her**.

→ her = Gladys ✓

→ herself = Gladys ✓

→ her = Ethel ✗

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...A exempt, B still applies?

(6) Gladys said that Ethel was taller than **herself/her**.

→ her = Gladys ✓

→ herself = Gladys ✓

→ her = Ethel ✗

→ herself = Ethel ✓

...A exempt, B still applies?

Complementarity varies by environment

Complementary distribution of pronouns and reflexives in English holds in some syntactic environments, but not others.

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Classic binding theory needs to be modified (Zribi-Hertz, 1989; Pollard and Sag, 1992; Reinhart and Reuland, 1993; Safir, 2004; Reuland, 2011; Charnavel, 2012; Charnavel and Sportiche, 2016; Marty, 2020, and many more...)

Most experimental studies on binding and pronoun resolution have only tested **coargument contexts** (Nicol and Swinney, 1989; Clifton et al., 1997; Badecker and Straub, 2002; Sturt, 2003; Kennison, 2003; Kazanina et al., 2007; Xiang et al., 2009; Chen et al., 2012; Dillon et al., 2013; Chow et al., 2014; Patil et al., 2016; Parker and Phillips, 2017; Sloggett, 2017; Kush and Dillon, 2021).

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- Substantial evidence that structural information influences online and offline resolution.
- Binding constraints, or more general preferences for (non-)locality?

Some studies have also examined **PNPs** (Keller and Asudeh, 2001; Runner et al., 2006; Kaiser et al., 2009; Cunnings and Sturt, 2014, 2018) and **PPs** (Bryant, 2022).

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- **Empirical generalization:** complementarity is weaker, but still present.
- For example, participants in Cunnings and Sturt's (2014; 2018) eye-tracking studies still preferentially resolved PNP reflexives to local antecedents, and PNP pronouns to nonlocal antecedents.

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- Are there still weaker locality preferences across the board?
- Are all noncomplementary environments the same?

Answering these questions can inform the study of how syntactic constraints influence resolution, as well as the theoretical study of anaphora.

Ex. 1: reflexives

Experiment 1 tested the resolution of reflexives.

- **2x2 design** crossed gender features on an embedded reflexive and a nonlocal antecedent, as in (8) (Sturt, 2003; Cunnings and Sturt, 2014, 2018).
- **5 structure types** were tested; coargument and PNP items adapted from Cunnings and Sturt (2014).

(7) **Coarguments**

- | | | |
|----|----------------------------------------------------------------------------|------------------|
| a. | Timothy knew that Mark had lost himself near the back of the store. | Local+/Nonlocal+ |
| b. | Miranda knew that Mark had lost himself near the back of the store. | Local+/Nonlocal- |
| c. | Miranda knew that Mark had lost herself near the back of the store. | Local-/Nonlocal+ |
| d. | Timothy knew that Mark had lost herself near the back of the store. | Local-/Nonlocal- |

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- (8)
- a. **Coarguments:** Timothy/Miranda knew that Mark had lost **himself/herself** near the back of the store.
 - b. **PNPs:** Timothy/Miranda knew that Mark kept a photo of **himself/herself** near the back of the store.
 - c. **PPs:** Timothy/Miranda claimed that Mark had found a gun near **himself/herself** in a paper bag.
 - d. **Coordination:** Timothy/Miranda claimed that Mark had impressed both Mary and **himself/herself** during the performance.
 - e. **Comparatives:** Timothy/Miranda claimed that Mark was taller than **himself/herself** by six inches.

Ex. 1: reflexives

Antecedent choice task: participants saw test items and were asked to choose an antecedent among 4 options: **local**, **nonlocal**, **someone else**, **unnatural**.

progress

Miranda knew that Mark kept a photo of himself near the back of the store.
Mark kept a photo of who?

Miranda.

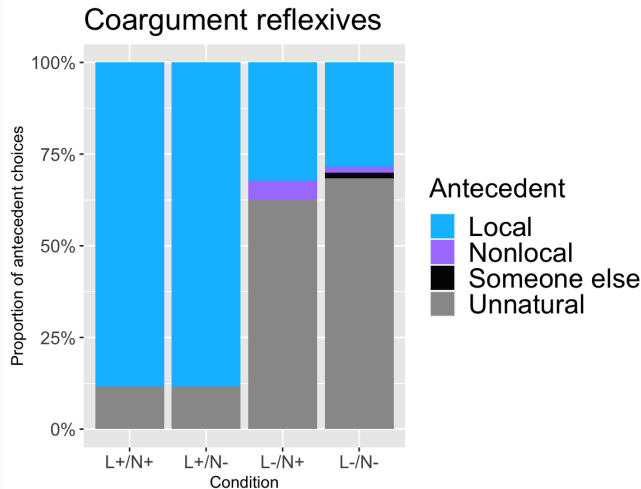
Mark.

This sentence is not natural.

Someone not mentioned in the sentence.

Native English speakers ($n=60$), each saw 20 target items with 4 per structure type and 20 fillers (Prolific, PC Ibex).

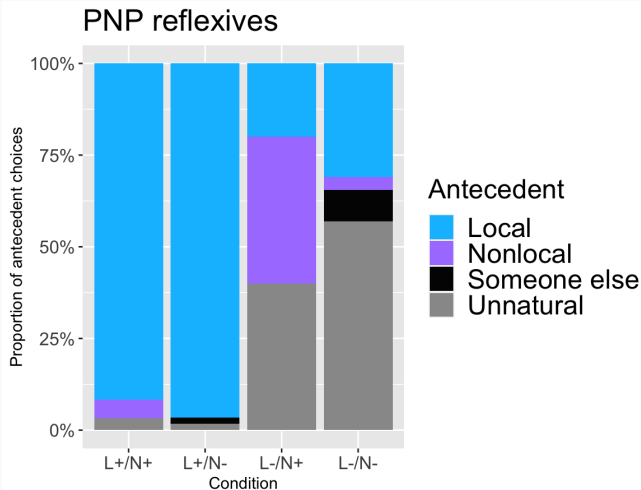
Ex. 1: results



Significant effect
of **local match**
($p < 0.001$).

- (8-a) **Timothy/Miranda** knew that Mark had lost **himself/herself** near the back of the store.

Ex. 1: results

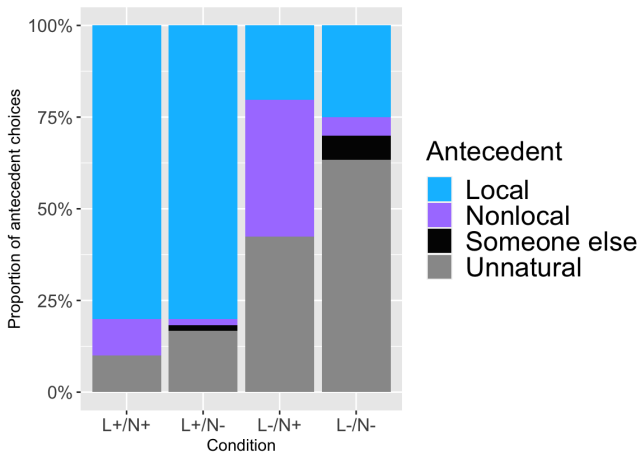


Significant effects of **local match** ($p < 0.001$) and **nonlocal match** ($p < 0.01$).

- (8-b) **Timothy/Miranda** knew that Mark kept a photo of **himself/herself** near the back of the store.

Ex. 1: results

PP reflexives

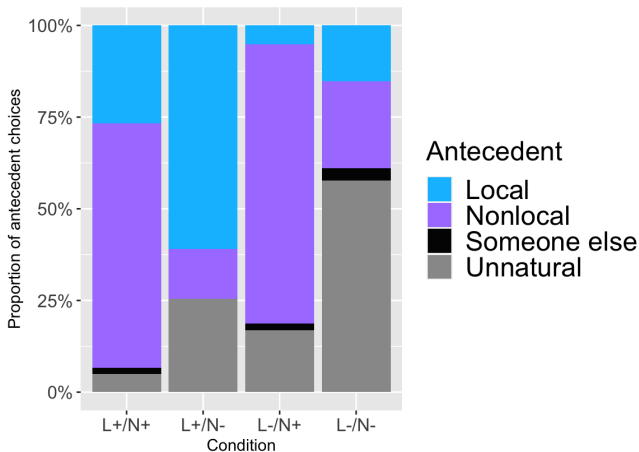


Significant effect of **local match** ($p < 0.001$); secondary analysis revealed an effect of **nonlocal match** ($p < 0.001$).

- (8-c) **Timothy/Miranda** claimed that Mark had found a gun near **himself/herself** in a paper bag.

Ex. 1: results

Coordinated reflexives

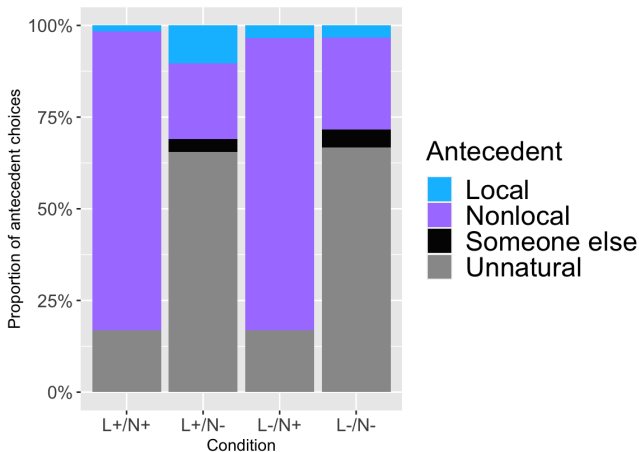


Significant effects of **local match** ($p < 0.001$) and **nonlocal match** ($p < 0.001$).

- (8-d) **Timothy/Miranda** claimed that Mark had impressed both Mary and **himself/herself** during the performance.

Ex. 1: results

Comparative reflexives



Significant effect
of **nonlocal match**
($p < 0.001$).

- (8-e) **Timothy/Miranda** claimed that Mark was taller than **himself/herself** by six inches.

Reflexives displayed a general preference for local antecedents.

- **Local** antecedents available to reflexives in all structures but **comparatives**.
- **Nonlocal** antecedents unavailable to **coargument** reflexives, available but dispreferred in **PNPs** and **PPs**, available in **coordination**, and the preferred option in **comparatives**.

Local only
Coarguments

Local preferred
PNPs, PPs

Equal
Coordination

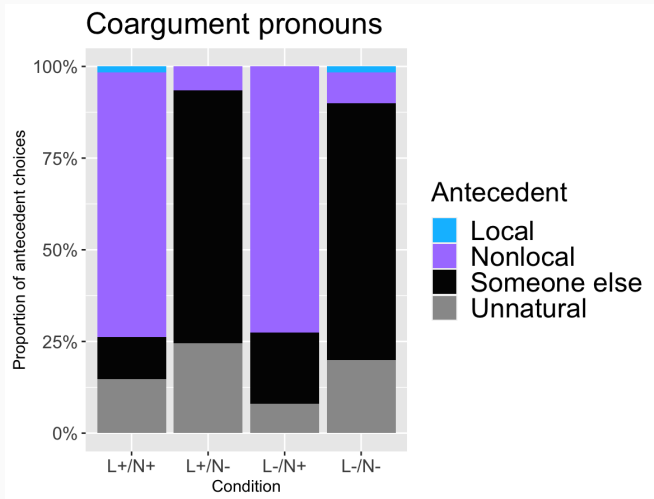
Nonlocal preferred
Comparatives

Experiment 2 (n=62) tested the resolution of pronouns.

- Otherwise identical to Ex. 1.

- (9)
- a. **Coarguments:** Timothy/Miranda knew that Mark had lost **him/her** near the back of the store.
 - b. **PNPs:** Timothy/Miranda knew that Mark kept a photo of **him/her** near the back of the store.
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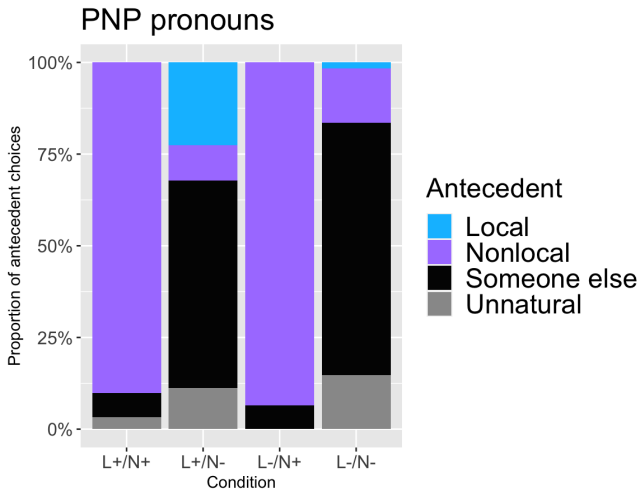
Ex. 2: results



Significant effect
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(9-a) **Timothy/Miranda** knew that Mark had lost **him/her** near the back of the store.

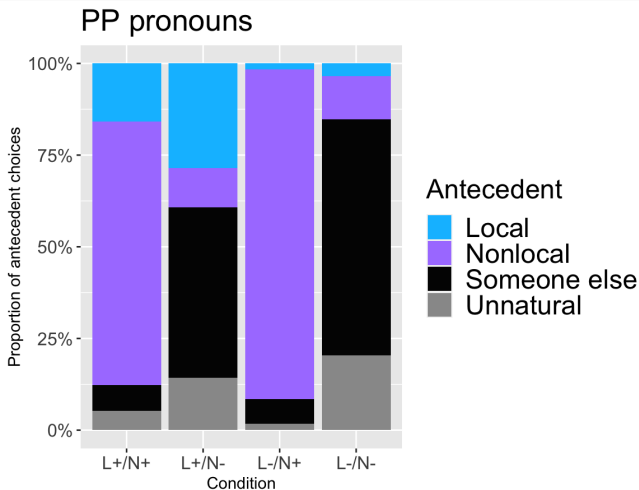
Ex. 2: results



Significant effect of **nonlocal match** ($p < 0.001$); secondary analysis revealed an effect of **local match** ($p < 0.05$).

- (9-b) **Timothy/Miranda** knew that Mark kept a photo of **him/her** near the back of the store.

Ex. 2: results

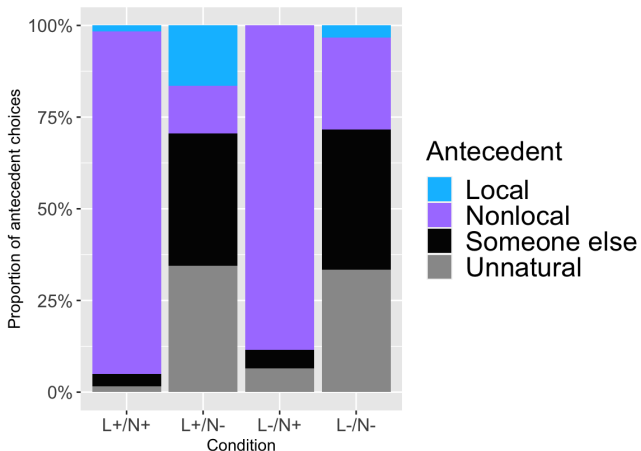


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- (9-c) **Timothy/Miranda** claimed that Mark had found a gun near **him/her** in a paper bag.

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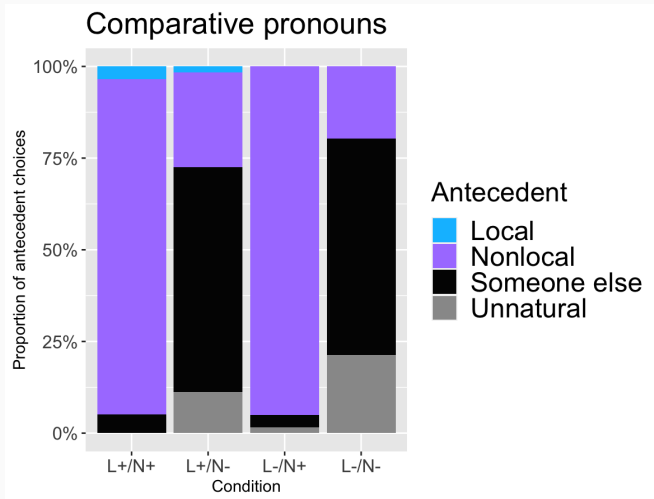
Coordinated pronouns



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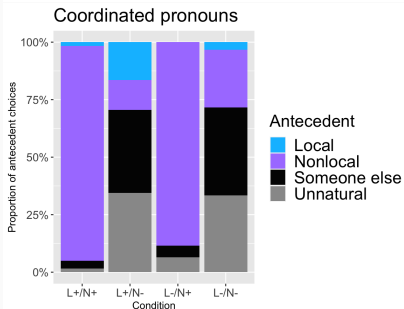
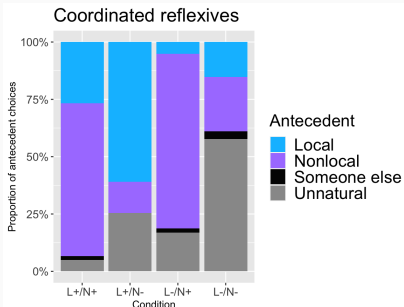
Pronouns displayed a strong preference for nonlocal antecedents.

- **Nonlocal** antecedents available in all 5 structures.
- **Local** antecedents unavailable in **coarguments** and **comparatives**, available but dispreferred in **PNPs**, **PPs**, and **coordination**.

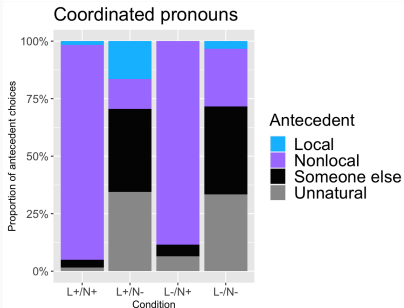
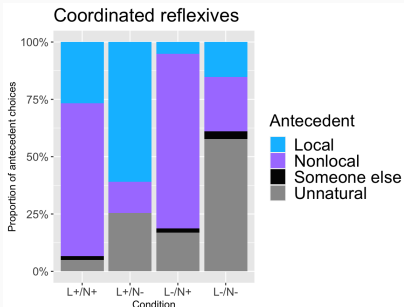
| | |
|---------------------------|---------------------------|
| Nonlocal only | Nonlocal preferred |
| Coarguments, comparatives | PNPs, PPs, coordination |

Coordination

Asymmetric **coordination** results: equal rates of local and nonlocal choices in **Ex. 1**, but local option dispreferred in **Ex. 2**.



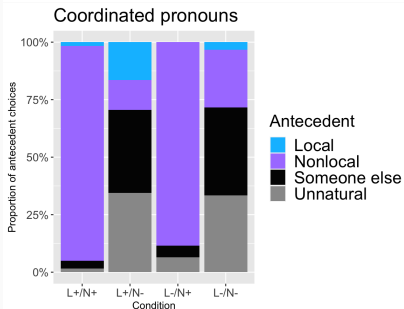
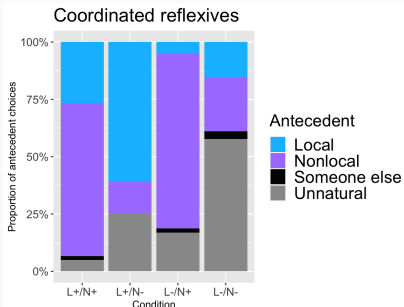
Coordination



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- Surprising to see **any** local choices in Ex. 2

Coordination



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- Condition B stronger than A?
- Surprising to see **any** local choices in Ex. 2 - but see Jacobson (2007)

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- **Reflexives** like local antecedents, but this preference varies across environments (and was eliminated with comparatives).
- **Pronoun** preference for nonlocal antecedents was stronger, but not total.

Noncomplementary environments vary significantly!

Two potentially important factors:

- Semantics of the embedded predicate, i.e., degree of “verb reflexivity” (Smits et al., 2007).

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- Semantics of the embedded predicate, i.e., degree of “verb reflexivity” (Smits et al., 2007).
- Discourse properties of the matrix predicate and sensitivity to logophoricity (Charnavel, 2012; Sloggett, 2017).

Thanks!

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